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TRANSACTIONS OF THE PATHOLOGICAL SOCIETY.

Monday, 31st October.

Dr. WEST read the report of

A Case of Malformation of the Heart and Great Vessels, attended with Cyanosis ; with remarks upon this affection.

The subject of this case was a boy, aged 8 years, of full size, well developed and possessing ordinary intelligence. His parents, who are remarkably robust and healthy, state he was born at the full time ; that at birth his skin was slightly blue, but that this appearance, which they describe as resembling "the effect of cold," did not assume a permanent or marked character, so as to attract general attention, until after an attack of pertussis, which he had when about fifteen months old. From this period the discolouration became fixed and very intense, particularly about his face and hands. M. Louis mentions a case in which cyanosis was thus fully developed after pertussis. He had never suffered from palpitation of the heart or dyspnea, except after unusual exertion, nor had he ever been subject to lypothymia. His parents state that at times, when he was sitting erect and perfectly quiet, they have known his skin, for a few minutes, to lose entirely its characteristic dark hue. Such a fact would appear to be with difficulty reconcileable with the commonly received opinion of the nature of cyanosis, which attributes this affection to the simple transmission of black instead of red blood through the vessels, else why should this, which is always present in them, *ever* fail to impart its proper colour to the surface. If, on the contrary, we suppose that from some cause or other, situated at the heart, the blood is materially and permanently retarded in its course back to this organ, and that congestion, therefore, ensues throughout the whole venous system, and that of the skin in particular, why then, we can explain the varying shades of colour, as well as the entire disappearance at times of the cyanosis, upon the presumption that the blood thus temporarily has been enabled to pursue a comparatively unobstructed course, with consequent relief to the local congestion producing the cyanosis. Berard, in his article upon the Abnormal Anatomy of the Heart, in the Dict. de Médecine, thus argues against the doctrine that cyanosis is owing to the simple presence of black blood in the vessels. He can understand, he says, why certain parts to which the arterial blood habitually gives a vermillion tint, such as the lips and the cheeks, should assume a dark colour, when a mixed blood is in circulation through the vessels, even without any retardation of its course, but he is not able to see why the skin of the rest of the body, which is not sufficiently vascular to receive a *red* tinge from the arterial blood circulating through its vessels, should become *blue*, when this fluid happens to be changed in colour. It ought to remain white, he contends, in the one as in the other case, if the circulation be not modified. In reply to

his own question, to what cause, therefore, are we to attribute the cyanosis? he says, "Evidently to the difficulty of the venous circulation and to the stasis of blood in this order of vessels." A positive fact upon this subject, stated by Breschet, seems to establish the point that something more than this mere presence of dark blood in the vessels is required to produce cyanosis. In that case the left subclavian arose from the pulmonary artery without the colour of the parts supplied by its ramifications being at all affected. Dr. Crampton has reported a case like our own in which the aorta was placed astride of the ventricles, unattended by cyanosis. As pertinent to this point we may quote the remark of Professor Fouquier, that the skin of the fœtus, in which nothing but black blood circulates, is nevertheless not cyanosed.

To return to the case before us. In July last this boy was suddenly seized with violent general convulsions, of several minutes duration. They had subsided when I saw him; he was then perfectly conscious, and complaining only of pain at the fore part of his head. He had slight dyspnea, but was able to assume a perfectly recumbent position in bed. The heart was beating tumultuously, with perfect confusion of all its sounds. The surface was every where intensely blue and cool; hands and feet quite cold. He was directed to be leeches to the head, with cold applications to it, and an injection to be given. On the next day he was able to be out of bed, and felt quite comfortably; although the cyanosis did not materially abate, he continued otherwise to improve until the third day from his first seizure. He was then again attacked in the same way with a convulsion, and almost immediately expired. The autopsy was made eighteen hours after death, with the assistance of my friends, Dr. Pepper and Mr. Wallace. The thorax only could be examined, from the limited time at our command.

The lungs, of full size, were congested throughout with very black blood; in other respects they were natural. The pericardium, which was remarkably prominent from the enlarged condition of the heart, contained a little yellow serum. The heart, in its substance, its coronary vessels, and in all its cavities, was remarkably turgid with dark blood. When emptied, it measured five inches in length, and seven in circumference, around the base of ventricles. Its cavities were all dilated and their walls thickened; those of the right side, however, in both these respects, much more so than the left ones. The actual capacity of the right was nearly double that of the left ones, showing, we think, that notwithstanding the community of the four cavities, by reason of the extensive opening between the ventricles presently to be described, those of the right side, nevertheless, preserved to a great extent their individuality, if we may so speak. These considerations strike us as important in contending for the operation of obstruction, at the right side of the heart, in producing cyanosis, where a communication exists between its opposite cavities.

The foramen ovale was closed. The opening existing between the ventricles and common to them and the aorta was circular, and about half an inch in diameter. It was situated at the posterior end of the base of the inter-ventricular septum, and did not interest the auriculo-ventricular orifice of either side. The aorta, the root of which was embraced within the limits of this opening, had an origin from each ventricle. Its valves were all perfect, and situated just at the mouth of the opening. The aorta measured an inch in diameter, with very firm parietes. The mitral valve overhung the opening described, at the left ventricle. The pulmonary artery presented some very peculiar deformities. The trunk of this vessel consisted of a conical

fibrous looking projection, about half an inch high, and arising from the heart by a broad and spreading base. It entered at a somewhat acute angle the side of a straight vessel, two and a half lines in diameter, constituting its right and left branches, which were attached closely to the aorta and to the left auricle by condensed cellular substance. This projection, on being laid open, was found to contain a little papillary eminence, about one and a half lines high, arising from the heart. A small aperture at its apex, scarcely capable of admitting a large pin, was continuous with a passage through it, of the same dimensions, to the heart, where it opened at the superior left corner of the right ventricle. This aperture was almost concealed from view by its position, and was also rendered somewhat valvular, by the muscular columns of the cavity encroaching upon it laterally. Very little blood could possibly have reached the lung through it; their main supply, on the contrary, was furnished by the ductus arteriosus, which was still open. Within the pulmonary artery, at the point where this duct commenced, there existed a kind of valvular arrangement, indicative of the important part played by it in the circulation of the blood. This duct passed directly across from the aorta to the pulmonary artery, which latter vessel being perfectly straight where the duct joined it, necessarily occasioned the blood which reached it, to branch off into two directly opposite currents. From this whole arrangement, we can readily conceive how much the course of the blood from the right ventricle into the lungs, must have been retarded, the whole of it, nearly, having to pass at several right angles, from the relative position of the different vessels. The consequence of all this must necessarily have been considerable delay of the blood in the right cavities of the heart, producing their dilatation, and also preventing the free admission of blood into them, together with congestion of the whole venous system, and, as a matter of course, that of the skin, more particularly, where it exhibited itself in the character of cyanosis.

The pulmonary veins were only two in number, and smaller than natural; the *venæ cavæ*, which were very large, instead of entering the heart separately, were first united into a common trunk, which joined the auricle about its middle, and exactly at a right angle; a further mechanical impediment was here offered to the free return of blood to the heart; a salutary provision, doubtless, by which the force of the blood in this direction was brought into harmony with that which marked its embarrassed departure from the heart. Such a relationship must have prevented the disturbing consequences which would otherwise have attended the arrival of blood at the heart more rapidly than it could be expelled from it. This arrangement beautifully illustrates that law of compensation so frequently observable in the animal economy, and to the operation of which we are inclined to attribute the comparative freedom which this patient enjoyed from the usual consequences of so extensive a malformation of the heart and great vessels.

We have now finished the description of the specimen before the Society, which we were induced to present to it, chiefly because its pathological or anomalous characters illustrated so perfectly those congestive views of the nature of cyanosis, which seem to be most consistent with physiological and pathological analogy.

Morgagni, in relating a case of cyanosis, from communication of the right and left cavities, with contraction, also, of the orifice of the pulmonary artery, remarks that in order to account for the livid colour in question, we must consider the influence of such contraction, (dependant, in his case, upon

ossification, believed by him to be congenital) in producing embarrassment of the circulation of the black blood, whereby this must remain stagnant in the right ventricle, in the corresponding auricle, and of consequence, in the whole venous system, "whence," he says, "results the livid colour of the skin." Louis, in his memoir upon this affection, asserts that in more than half the cases, where cyanosis followed the communication of the right and left cavities, there was found contraction of the orifice of the pulmonary artery, conjoined with the above condition of the heart. The venous congestion, however, which is maintained by Louis and many others to be the essential character of cyanosis, in these cases of malformation of the heart, attended by the mixture of the two bloods, will of course be promoted by the inactivity of the capillaries themselves, super-induced by the presence, in them, of an imperfectly vitalized blood; the influence, therefore, of the latter circumstance is by no means to be overlooked or undervalued, in our inquiries into the mode of production of cyanosis. In opposition to the views to which we have called attention, and in favour of those more commonly received, it will doubtless be asked, how happens it then that cyanosis is rarely, if ever, observed, except where a direct communication exists between the opposite cavities of the heart, even though obstruction at its orifices should exist to the greatest extent? This question or objection might fairly be answered, it appears to us, by inquiring in return, why it is that cases now and then occur, in which, after death, extensive communications of this kind have been discovered, without the subjects of them during life having presented the smallest appearance of cyanosis? But the coincidence of these two lesions of the heart is almost a necessary one, since the diversion of the blood through the ductus arteriosus from the aorta into the lungs, must unavoidably produce a more or less perfect closure of the pulmonary orifice, by reason of its proper function being suspended. We cannot, of course, imagine the long continued independent existence of such extreme contraction of the pulmonary artery, amounting almost to obliteration, as would be necessary to the production of permanent cyanosis, since such a lesion would be incompatible with the existence of life; but when this is associated with an opening in the septum of the heart, by which the blood is able to find its way, although very indirectly and obstructedly, as we have seen, to the lungs, the difficulty just named is removed; still, however, even under these circumstances, the circulation is far from being easily and perfectly performed, and the train of consequences before alluded to, necessarily follows, and cyanosis is produced. In regard to the influence of the contraction of the pulmonary orifice, and in further corroboration of the views above expressed, it may be asked, what symptom is more common in cases of contraction of this, or any of the orifices at the right side of the heart, whether arising from actual disease in them, or from vegetations, and other affections of their valves, than the occurrence of lividity of the face, neck and other parts of the body? and what is this lividity, but an imperfect, limited cyanosis, which doubtless would become complete and general, but for the reasons already alluded to, when speaking of contraction of the pulmonary orifice?

In conversing upon this subject with our friend Dr. Hallowell, a member of this Society, who has paid particular attention to cardiac diseases, he remarked to us, that in the case of a patient who had died under his care with vegetations of the pulmonary valves, which had considerably occluded this opening, he had observed, just before death, the supervention of nearly complete cyanosis. We have referred, for confirmation of the congestive view

of the nature of cyanosis, to physiological analogy and pathological experience.

We would therefore ask, what causes the dark, cyanosed appearance of a part, upon which strangulation has been exerted with sufficient force to arrest the venous, but not materially to interfere with the arterial circulation? Is it anything else than venous obstruction? What is it, again, that causes the duskiness or deep livid hue of the countenance, so commonly present in severe and extensive congestion of the lungs? It certainly is not for a moment supposed, that in such cases the blueness is produced by the heart circulating black blood, however fully we may admit the fact of the lungs being disabled under such circumstances, from properly discharging their decarbonizing functions. Congestion of the superficial capillaries from obstructed circulation through the lungs, is perfectly understood to be the whole cause of this appearance. Here we assume a point of obstruction, different to be sure from the one in cases of malformed heart with cyanosis, but nevertheless operative in precisely the same way, viz., by retarding the course of the blood. What is it, too, which mainly causes the dark colour of the skin in asphyxia; or even the blueness of the lips, of the ends of the fingers, and of other parts, in the chill of a common intermittent fever?

These, and all analogous cases, are but instances of partial cyanosis; and yet we seek no other explanation of them than the simple and satisfactory one of venous obstruction and congestion, originating in the latter case, probably at some of the great internal organs, and in the former from the same immediate cause, though induced, perhaps, by many different agencies. If, therefore, as we have seen in the instances just enumerated, some transient obstruction, wherever situated, is able to produce what may be considered a local cyanosis, why should not a general affection of this kind be expected from obstruction or obliteration of some of the great orifices at the heart, the very centre of circulation; particularly when we recollect that under such circumstances the venous system must be everywhere engorged and overloaded with blood, and its capacity of course exceedingly increased by the long continuance of such a condition.

Bertin, in combating the opinion that the simple mixture of the two bloods at the heart is the occasion of cyanosis, remarks that it is entirely inadmissible, since he has in his possession cases in which this affection did not exist, although the right and left hearts communicated, and others, where the cyanosis existed, although no communication of the kind was present. In fact, he says, if the *blue* colour of the skin be produced by this malformation, the same colour should be met with in every other part, which is contrary to observation. This want of universality of the blueness of all parts of the body in cyanosis, is a very strong argument against the common theory of its production. We do not even find the whole surface of the body discolored in this affection; the blueness being conspicuous only in certain parts. These remarks might be much extended; what we have said, however, will suffice to bring the question before the Society.

ANALECTA.

The Surgical Practice at the Hôtel Dieu.—In one of the late numbers of the French Medical Gazette there is a statistical report for 1841, of the

surgical practice of Professor Roux at the Hôtel Dieu in Paris—the largest Hospital, it is well known, in that metropolis.

The total number of patients admitted under his care, during the 12 months, was 1441—of whom 1303 were males and 138 were females.

The operations performed were as follows :—

	Cases.	Deaths.
Amputation of the thigh,	8	5*
Amputation of the leg,	5	3
Amputation supra-malleolar,	1	0
Amputation of the fore-arm,	2	1
Amputation of the metacarpal bones,	4	2
Amputation of the fingers,	7	0
Resection of the elbow,	3	1
Resection of a rib,	1	0
Extraction of Sequestræ,	2	0
Trepan,	2	2
Cancer of the lower lip,	3	0
Epulis,	1	0
Cancer of the cheek,	1	0
Section of the genio-glossi for stammering,	1	1
Cancer of the tongue,	2	0
Cancer of the velum palati,	1	0
Staphyloraphy,	3	0
Excision of the tonsils,	4	0
Excision of an osseous cyst on the upper jaw,	1	0
Hernia, crural,	6	5
Hernia, inguinal,	3	
Fissure of the anus,	18	0
Fistula, recto-vaginal,	1	0
Anus, imperforation of, <i>Littre's</i> operation,	1	1
Anus, at umbilicus,	1	1
Amputation of the penis,	1	0
Amputation of the testicle,	3	0
Lithotomy,	4	3
Lithotrity,	2	1
Excision of the mamma,	6	0
Strabismus,	6	0
Cataract,	41	0
Artificial pupil	1	0
Varicocele,	5	2

With several others of minor importance.

The total number of deaths that occurred after operations was 34. If we add to this 56, the number of cases which proved fatal spontaneously, either from the severity of the accident sustained, or the gravity of the existing disease, we find the entire mortality to be ninety-one during the twelve months.

By far the most frequent cause of death after the operations, was purulent absorption, and the consequent contamination of the whole system, the induction of hectic fever, &c.

If we may judge from the result of one year's experience, it would seem that cold weather is decidedly unfavourable to the success of great opera-

* In one case both thighs were amputated.

tions: nearly two-thirds of the deaths occurred during the months of January and February.

Erysipelas, it deserves to be noticed, was by no means very prevalent during this year; the absence of this most pernicious visitant may perhaps account for the comparative smallness of the mortality during the warm months.

There is very little interest in the separate details of this report; it is meagre and unsatisfactory. As we have heard so much for the last year or two of the *brilliant results* of myotomy, applied to various diseases, we select the following notice of M. Roux's practice in a case or two of stammering.

The Reporters state with not a little justice that, even before the results of surgical interference in the treatment of this complaint were at all ascertained, a variety of operations had been proposed and adopted by different men. Unfortunately for them all, they seem to have now fallen into complete oblivion.

M. Roux, as a matter of course, was called upon to test the real merits of the cutting method of treating impediments of speech. In one case he divided merely the *frænum* of the tongue—in an old man, 60 years of age—which was perfectly free in its movements. This man certainly stammered most shockingly, all the muscles of his face being often thrown into convulsive spasms, when he made an effort to speak. No sooner was the *frænum* divided, than "*avec beaucoup de netteté il se confond en remerciemens*;" and he naturally expressed his astonishment that he should have been allowed to remain all his lifetime without relief. The cure seemed to every one at the time to be "*brilliant and complete*;" when, behold, he began to stammer as bad as ever, and in this state he remained during all the time that he was in the hospital.

In another case, M. Roux divided the *genio-glossi* muscles at their insertion into the lower maxilla; here too the stammering ceased at the time, but speedily returned; and when he left the hospital, he was no better than before.—*Medico-Chirurgical Review*. Oct., 1842.

On the minute Structure of the Lungs in Man and the Mammalia. By M. BOURGERY.—The peculiarities of M. Bourgery's views relate chiefly to the mode in which the minutest bronchial tubes terminate. "Each lobule," he says, "receives a single central bronchial branch, which forms the common tree of its air-tubes; or, if the lobule be large, two or even three of these branches may enter into it. The smallest of these lose themselves laterally in the manner presently to be described; a single tube, which is the continuation of the trunk, reaches the peripheral base of the lobule, and there ramifying, turns towards one of its angles, which forms the terminal summit. Proceeding from this decreasing central tree there arise from every side, in alternate succession and in star-like radiation, secondary branches, which I have named *bronchial ramified canals*, the ultimate expansion of the tracheal tree, beyond which the *labyrinthic* arrangement commences."

This labyrinthic arrangement is made up of numberless minute canals, (*ærial labyrinthic canals*), arising from the bronchial ramified canals, running tortuously in every direction, and branching and anastomosing in the most multiform manner. They thus inclose numberless irregular spaces, in which, as well as on their walls, the blood-vessels ramify and form their

capillary net-work. They give the idea of a space all divided with thousands of tortuous branchings, everywhere continuous with itself, and where there is no termination except the one common orifice of entry and exit in the trunk of the bronchial tree of each lobule. In no observed instance was there anything like a cul-de-sac or cæcal termination of any of the canals; "whatever point or surface he observed, there are flexuous canals anastomosing in every plane, but nowhere are there any straight canals without anastomoses or any vesicles." The sinuous canals, moreover, are from space to space constricted, not, as Willis supposed, by ligamentous fibres, but by annular vessels, circumscribing in their intervals *loculi*, at the bases of which are the orifices of other labyrinthic canals, and giving that appearance of chains of cellules which forms the basis of the theories of Malpighi and Helvetius. In such canals as these, the ramified bronchial canals, after giving off great numbers of them from their sides, ultimately, by dividing twice or three times, terminate; and their terminal branches enter into the common labyrinth, comporting themselves like the tubes given off from their sides.—*British and Foreign Med. Review*. October, 1842. *From Gazette Médicale*. Juillet 16, 1842.

On a very simple means of arresting Epistaxis. By Dr. NEGRIER, of Angers.—This consists in nothing more than closing with the opposite hand the nostril from which the blood flows, while the arm of the same side is raised perpendicularly above the head. In every instance in which he has had recourse to this means during the past three years, M. Négrier has always found that it suspended the hemorrhage: a fact of which he offers the following explanation.

When a person stands in the ordinary posture, with his arms hanging down, the force needed to propel the blood through his upper extremities is about half that which would be required if his arms were raised perpendicularly above his head. But since the force which sends the blood through the carotid arteries is the same as that which causes it to circulate through the brachial arteries, and there is nothing in the mere position of the arms above the head to stimulate the heart to increased action, it is evident that a less vigorous circulation through the carotids must result from the increased force required to carry on the circulation through the upper extremities.—*Ibid*, from *Archives Générales de Médecine*. June, 1842.

Medicinal Properties of Bromine and its Compounds.—Bromine was first used as a medicinal agent by M. Pourché, a townsman of Balard. Previous to this, a person named Desorgues, calling himself *simple magistrat*, had written to the Academy of Medicine, proposing the employment of bromide of mercury in the treatment of syphilis.

M. Bonnet in a paper published in the *Bulletin Général de Therapeutique*, July 1837, gives a complete digest of what had been then observed in France with regard to the medicinal uses of bromine and its compounds. He refers to the researches of M. Pourché. In a case of scrofulous enlargement of the glands of the neck in a woman of 22 years of age, who had been affected for seven years, a cure was effected in three months by the external and internal use of bromine. At first six drops dissolved in three ounces of water were given in the day, in three doses. Next day, ten drops were given. In ten days, the dose was increased to fourteen drops daily, and at last to thirty

drops in the same quantity of water. Cataplasms, moistened with solution of bromine, were applied to the swellings. The same physician had great success in the treatment of scrofula by the internal and external use of the hydrobromate of potass.

M. Bonnet attributes great advantages to the bromide and sub-bromide of mercury, as constitutional remedies in comparison with corrosive sublimate and calomel. He states, that the sub-bromide has less action than calomel on the salivary glands, and more effect on the urinary secretion; that the former substance is therefore preferable where the idiosyncrasy of the patients renders them liable to salivation. After stating that the bromide is less soluble in water than the chloride, he recommends a solution in ether for medicinal use, and gives the observations of an Austrian physician, which prove the antisiphilitic virtues of the remedy, and contends that it is not so liable as corrosive sublimate to affect the head, chest, and stomach during its medicinal use.

In the cases of M. Fournet, already referred to, the therapeutic action of the bromine is exceedingly obscure. Frictions of bromine to the swollen articulations appear to have been useful, but as their application was conjoined with alkaline baths, and, moreover, the bromine was mixed with alcohol, which would soon change it into bromal and hydrobromic ether, these cases prove very little.

Magendie employs bromine and its preparations in scrofula, amenorrhœa, and in hypertrophy of the ventricles. He expresses his conviction that future observation will establish the great therapeutic powers of bromine.

Dr. Williams has used the bromide of potassium with success in cases of enlarged spleen. The first case which he gives is that of a boy, aged 14, admitted into St. Thomas' Hospital on the 13th of September 1833. Both the liver and spleen were enormously enlarged. Their edge was hard, and substance unyielding. The abdomen contained much fluid; the countenance was sallow and emaciated; the legs dropsical; belly protuberant. The prognosis was most unfavourable. After unsuccessful trial of the supertertrate of potass and iodide of potassium, the iodide of mercury was used. This last remedy removed the dropsy, but the liver and spleen remained enlarged. On the 13th of May, the patient commenced with a grain thrice a day of the bromide of potassium, which dose was gradually increased to four grains. On the 10th of July he became slightly jaundiced. From apprehension that the bromide might have caused this, he had doses of the sulphate of magnesia instead until the jaundice had disappeared, when, on the 11th of August, the bromide was recommenced in four grain doses. On the 15th the dose was increased to five grains thrice a day, and continued for fourteen months. Under this treatment, he gradually improved, and was dismissed with the liver and spleen only one-third of their former size.

In a second case of enlarged spleen with ascites, in a woman aged 30, the bromide could not be given in larger doses than four grains three times a day, on account of its tendency to disorder the bowels. After nine months treatment by the bromide, she was dismissed with the spleen still above the natural size. Dr. Williams gives two more cases in which the results were of the same character.

I shall give a summary of my own results.

Case 1.—Eczema of the legs and arms in a married woman aged 40, of strumous habits, the mother of a large family. The disease, an inveterate form of eczema, had lasted a twelvemonth; for six months she had been

under the care of Mr. Brady of Gateshead, who had tried a variety of remedies without success. The eruption became moist every morning about three o'clock, and continued so for an hour, it then turned dry, and was accompanied by heat, redness, and itching. A saturated solution of bromine mixed with water until it ceased to give pain, and applied by means of lint and oil-skin, caused a decided improvement to take place. In two months the patient was cured.

Case 2.—Specific ulcers of the legs of long standing. This was a case treated in the Edinburgh Infirmary under the care of Dr. Handyside. The man, aged 22, had been suffering for thirteen years from the effects of a kick of a horse, which had produced lacerated wounds on the anterior surface of the tibiæ at their middle third. According to his own account these never entirely healed. On admission, there were several small ill-conditioned sores over the seat of the former injury. From the 9th of May to the 20th June, various metallic washes were applied to the ulcers without success. Then, the ulcers were treated with a strong ethereal solution of bromine, which acted as a caustic, and lint steeped in saturated solution of bromine placed over them, covered with oil-skin. Next day the same process was repeated. The application produced pain and intense redness, and after the second time was not repeated. The ulcers healed rapidly afterwards, and cicatrization took place.

Case 3.—A case of carbuncle, under the care of Mr. Bennett of Gateshead, which after resisting the hydriodate of potass used externally and internally, was cured by the external use of a solution of bromine—forty minims to the pint of water—in between six and seven weeks. Mr. Bennett has used the lotion of bromine with success in many cases of skin affections, and in cases of purpura.

Case 4.—Anomalous syphilitic tubercles of the legs. This was a strong man of 36 years of age, who had been affected with syphilitic and mercurial symptoms for eight years. For six years, he had a discolouration of the skin of the right fore-arm and left thigh, accompanied with pain of the bones at night. For several years, swellings have formed on these parts, which broke, leaving deep ill-conditioned ulcerations. The case was under the care of Mr. Dawson of this town, who commenced the treatment on the 14th of May, 1841. At first, the lotion of bromine—ten minims to the pint, was employed for a month, with the effect of cleaning the ulcers, and removing the discolouration, in a great degree; after this, he had an ointment composed of eight minims of bromine, and half a drachm of the bromide of potassium to an ounce of lard, which was ordered to be well rubbed on daily. Under this application, without internal treatment, the sores had healed, and the discolouration was removed by the 15th of December. Previous to the commencement of the treatment, the disease had a very formidable appearance.

Case 5.—Sarcomatous tumour of the knee, of about the size of an apple, spongy, not painful, in a woman aged 44; removed in a month by frictions of an ointment composed of thirty minims of bromine and a drachm of the bromide of potassium to an ounce of lard.

Case 6.—Purulent ophthalmia in a child, where Mr. Brown, of Jarrow, substituted a lotion of bromide of potassium, three grains to the ounce, with success, for the sulphate of zinc previously added.

Case 7.—Scrofulous ulcer of the leg in a boy, aged 12. Admitted into the Newcastle Infirmary under the care of Sir. J. Fife, July 5th, 1839. A

large foul scrofulous ulcer occupied nearly the whole of the inner aspect of the left leg. There was a similar ulcer, of the size of a half-crown, on the back of the right wrist. There was great pain in the ulcer of the leg, the appetite was bad, and he slept little. The sore on the leg had lasted for three years. Tonics and hydriodate of potass internally were conjoined with the external use of creosote and ioduretted solution of hydriodate of potass. No benefit was produced. In the beginning of December, the bones of the leg and carpus were obviously diseased, and symptoms of hectic appeared. The hydriodate of potass was again tried; no benefit was derived, and the lotion of bromine in the dose of forty minims to the pint of water was applied externally three times a-day by means of lint and oil skin, while the bromide of potassium was given internally.

Under this treatment the ulcers assumed a more healthy aspect, and gradually diminished in size, while their fœtor and pain were lessened. In six weeks the ulcer on the leg was nearly healed; that on the wrist continued open. He was then made an out-patient, and died in the course of the winter, I understand, of diabetes. The bromide of potassium was at first given in the dose of three grains thrice daily, in pill. After three days this dose was increased to four grains, and so every three days, until twenty-four grains were taken daily. Under this treatment the appetite improved, the night-sweats diminished, and the urine increased in quantity. Bromine was several times found in the urine during the treatment.

Cases 8, 9, 10, and 11.—These were cases of malignant ulcer of the face, and syphilitic ulcers, where the bromide of mercury was employed internally, in the dose of the eighth of a grain thrice a-day, while the solution of bromine, of the strength described in the preceeding case was used externally. All the patients were men, and the cases were observed in the Newcastle Infirmary. The syphilitic ulcers rapidly healed, but during the internal treatment in three of the cases, symptoms of physiological action were observed exactly like those of corrosive sublimate. Very severe head, chest, and stomach affections were produced. The case of malignant ulcer was somewhat improved, and in this case, although the urine was increased in quantity during a treatment of a month, no head, chest, nor stomach affection was observed. There was slight salivation.

Case 13.—Mesenteric tumour in a weaver, aged 22, Edinburgh Infirmary. Here the bromide of iron was used internally without success, so far as the swelling was concerned, but with improvement of the appetite. The dose was twelve grains in twenty pills, two morning and evening, from the 12th to the 21st of August, 1840.

Case 14.—Here the bromide of potassium was employed internally in a case of scrofulous enlargement of the glands of the neck in a pitman, aged 19, the same salt with bromine being used externally in the form of ointment. Five grains of the salt were given internally every three hours; and the ointment was composed of thirty minims of bromide, and a drachm of the salt to the ounce of lard, and rubbed on thrice a-day. In three weeks the glands were reduced to a third of their size, and some pain which had been felt in the throat was no longer experienced; then the glands began to suppurate; the internal treatment produced no constitutional effect. I owe this case to Mr. Brown of Jarrow.

Case 15.—Scrofulous enlargement of the glands of the neck in a girl, aged 16, treated by the bromide of iron internally, and ointment of bromine and hydrobromate of potass externally. The internal remedy was given in

the dose of forty drops of a solution of one drachm in two fluid ounces of water, twice a-day; the external application was of the same strength as in the preceding case. The treatment was continued from the 22d of June, 1841, to the 11th of August, when the general health was much improved, but little effect had been produced on the tumours.

Case 16.—Hypertrophy of the submaxillary gland in a youth, aged 18. Treatment and result similar to that in the preceding case. The internal remedy caused some degree of diarrhœa.

Case 17.—Case of rupia treated by lotion of bromine externally, and the bromide of iron internally. The patient, aged 23, was treated in the Newcastle Infirmary, by Dr. Cargill. While the sores of one leg were treated by the lotion of bromine of the strength of forty minims to the pint, those of the other leg had nitrate of silver applied; the superiority of the latter application was very evident. The bromine produced soreness, and a serous exudation from the ulcers; the ointment of nitrate of silver, on the other hand, only caused temporary pain, and was soon the means of forming a dry scale. Two drachms of the bromide of iron were dissolved in two fluid ounces of water, and the patient had twenty drops three times a-day. The treatment was commenced on the 22d day of February, 1841. The external treatment by bromine was soon suspended. The dose of the internal remedy was gradually increased to 100 drops three times a-day. This large dose on the 22d of March had produced no unpleasant symptom, but great improvement of the appetite and increase of strength appeared to have resulted from its use. The rupia got well under the application of the nitrate of silver.

Case 18.—Chronic rheumatism in a man, aged 24. Here the internal use of the bromide of iron in the dose of six grains thrice a day gave rise to severe pain of the head and chest. (Newcastle Infirmary.)

Remarks.—The cases whose prominent features I have thus endeavoured to describe, can be only supposed to give the slightest possible foundation on which to frame inductions with regard to the real therapeutic power of bromine and its compounds. I should be induced to recommend the external use of bromine in scaly darts affections of a peculiarly inveterate character, in specific and malignant ulcers where there is defective action, and in the form of lotion the element furnishes an elegant and cleanly application. The solution is slowly changed by the action of light; the hydrobromic acid being formed. Oil-skin should be employed to cover the lint in which the bromine is dipped, in order to prevent the evaporation.

Internally the use of bromine must necessarily be very limited. The sensation which attends the swallowing of it is, I repeat, truly horrid. The bromide of potassium is less powerful than the iodide, and might perhaps be used with advantage, where the latter is apt to disagree with the stomach. The bromide of iron is perhaps the most agreeable of the strong preparations of iron. I have prescribed it frequently as a general tonic, and in hysteria and leucorrhœa. I conceive it to be less liable to decomposition than the iodide. A most exaggerated notion has been entertained of its power. The bromide and sub-bromide of mercury appear to have the good and bad properties of corrosive sublimate and calomel.

General Conclusions.

1. Bromine appears to resemble chlorine much more than iodine, in its physiological properties.

2. All the bromides seem to bear a closer relation to the chlorides physiologically than to the iodides.

3. The chemical and physiological relations of the group of halogenous elements and their compounds, are in strict accordance.

4. Although in general the compounds of chlorine, bromine, and iodine with metals appear to resemble other salts of the same bases, in their action on the animal economy, yet we may perceive that the haloid salts are for the most part marked by peculiar resemblances.

5. As far as we can observe, the class of medicinal agents which bromine and its compounds furnish, is intermediate in medicinal action between the two allied groups, but nearer that of chlorine than that of iodine.—DR. GLOVER, in *Edinb. Med. and Surg. Journ.* October 1, 1842.

Peculiar granular appearance of the buffy coat of the Blood. By M. PIORRY. In a recent lecture at the Hospital of la Pitié, M. Piorry called the attention of his class to a granular condition of the buffy coat of the blood, which he has observed only in cases in which pus was contained in some organ in considerable quantity, especially in the lungs. In these cases the buffy coat covering the blood contains rounded, grayish granulations, of a darker colour at the centre than at the circumference, varying from the size of a poppy to that of a hempseed. Sometimes five or six of these granulations are contained within the space of a square inch; at other times they are much more numerous. They are semi-transparent at their borders and opaque at their centre. They are situated at different depths in the substance of the buffy coat, from which they can be detached with the point of a scalpel, though not easily. The buffy coat does not present any peculiar appearance, and these granular bodies have never been observed in the clot.

This appearance is far from common: M. Piorry has not met with it above twenty times. In seventeen or eighteen of these twenty cases death took place; and in every instance pus was found in the substance of some organ, especially of the lung, which, in fifteen cases, was in a state of purulent infiltration.

Pneumonia with purulent infiltration of the lung existed in the patient whose case gave rise to the above remarks. The granulations are regarded by M. Piorry as collections of purulent matter; and he replies to M. Donné, who denies their resemblance, under the microscope, to the true pus-globule, that the circulation of pus in the blood must alter the characters of the former, and that the results of microscopic investigations are not of value sufficient to overturn facts gathered by clinical observation.—*Brit. and For. Med. Rev. from Gaz. des Hôp.*, Avril 16, 1842.

Intra-Parietal Hernia after a wound of the Abdomen. By M. BERARD.—The case detailed in M. Berard's clinical lecture, affords a good example of an accident which is apt to occur not only in penetrating wounds of the abdomen, but in operations for hernia. In the endeavour to force the intestine (which had protruded) back into the abdomen, it was pushed up between the layers of abdominal muscles, and here, in the cavity thus artificially formed, became strangulated. The case was the more perplexing, because, when the intestine was in this position, the finger could be easily passed into the abdomen, and the intestine seemed to be entirely reduced.—*Ibid, from Gaz. des Hôp.* Juin 28, 1842.

Preservation of Nitrate of Silver. By M. DUMERIL.—For this purpose M. Dumeril has invented a plan. He melts in a vessel over a fire the best sealing-wax, containing a large quantity of gum-lac, and in this he dips the piece of caustic, over which he thus obtains a complete and firmly adherent varnish impermeable by the air or light, and completely preventing the staining of the fingers. In using the caustic, all that is necessary is to scrape off with a penknife as much of the wax as is required to expose a surface of given size. Caustic thus coated is of course very convenient for introducing into cavities of which only a small portion is to be touched.—*Ibid*, from *Bul. Gén. de Thérapeutique*, Mai, 1842.

A Case of Exophthalmia, with Œdema of the Conjunctiva, and Opacity of the Crystalline Lens in a Puerperal Woman. By M. BLANDIN.—A woman, forty-one years old, was delivered, after a tedious labour, on December 3d, 1841. For fifteen days no unusual symptom occurred, but on the sixteenth and seventeenth day the patient was attacked by a violent shivering fit. On the eighteenth day, however, she returned from the hospital to her own home, and for some days afterwards suffered from febrile attacks, though they were no longer preceded by severe shivering. From the 25th of December the right eye began to project, the patient suffering little beyond a sense of weight in the head, principally in the supra orbital region. Vision was at first unimpaired, but failed as the exophthalmia increased, and at last the patient became quite blind of that side. In this condition the patient applied to M. Blandin, at the Hôtel Dieu. There was then considerable prominence of the right eye, the conjunctiva of the globe was prominent, red, and swollen, and evidently infiltrated. The cornea was natural, the aqueous humour retained its transparency, and there was no evident change in the structure of the iris, but it had lost its contractility, and the eye was uninfluenced by exposure to a strong light. The crystalline lens appeared opaque, and of a shining, milk-white colour; the anterior membranes of the lens being in all probability the seat of the opacity. The volume of the globe was normal, the pain in the affected parts was inconsiderable, and no tumefaction existed of the parotid or cervical glands. The intellectual faculties were perfect and the general health was good.

In his remarks on the case M. Blandin offers some observations on the diagnosis of the affection. Some ramifications of the conjunctiva gave exit to a small quantity of pus from its inferior external portion. From that time the eye gradually retreated into the orbit, and from these circumstances M. Blandin concludes that there existed a small abscess behind the eye. The cause of the formation of this abscess is open to debate. It might be one of those purulent deposits occasionally met with in puerperal women. M. Blandin, however, regards it rather as the result of phlebitis, probably of the ophthalmic vein. He is likewise disposed to regard the affection as altogether analogous to *phlegmasia dolens*, in which disease the femoral vein becomes obliterated, just as here, in all probability, the ophthalmic vein was. On any other supposition the opacity of the capsule of the crystalline lens does not admit of explanation; while, in two other instances in which this lesion of the ophthalmic vein was discovered after death, precisely this condition of the crystalline lens had been noticed during the lifetime of the patient.—*Ibid*, from *Gazette des Hôpitaux*. Jan. 27, 1842.

Preparation of Mercurial Ointment.—Mr. Redwood brought before the notice of the Pharmaceutical Society some lard prepared in a peculiar manner, for the more speedy oxydation of mercury. The process he adopts is as follows:—The lard is melted in an earthen pipkin, and, while in a fluid state, poured in a thin stream, from some height, into a vessel containing a considerable quantity of cold water. The lard diffuses itself in a thin stratum over the surface of the water; it is now to be collected and placed in a coarse hair sieve, and the top of the sieve to be covered with paper, to preserve it from the dust. In this state it should be kept in a dry apartment, exposed to the action of the air for two or three months, at the expiration of which time it will be found to have acquired the property of readily combining with a very large proportion of mercury. This process was first suggested by M. Dorly, a French chemist. Mr. Redwood then exhibited some lard thus prepared, and demonstrated to the society its advantages in combining with the metal with less labor and loss of time than is usually incurred.—*Pharmaceutical Journal*.

Strangulated Ventral Hernia.—Operation. By Mr. T. P. TEALE.—Richard Morton, æt. 69, of plethoric habit, was admitted into the Leeds General Infirmary on the 1st of June, 1842, labouring under symptoms of obstruction of the bowels.

He states, that after violent exertion about two years ago, a tumor formed at the left side of the abdomen, which has never since then entirely disappeared.

At five o'clock this morning, he began to suffer from severe pains in the abdomen, with frequent vomiting. He is now much exhausted, vomiting large quantities of black fluid, like coffee-grounds; much perspiration; pulse 118, intermittent; abdomen tender, more especially in the left iliac region, where a flattened oval tumor, about three inches in length, is perceptible; this tumor is situated beneath the aponeurosis of the external oblique, which forms a tense and smooth covering of the tumor. The bowels have not acted since yesterday. A dose of cal. and col. immediately, and ol. ricini in an hour afterwards. A large clyster to be injected.

The injection brought away a small quantity of fæcal matters, but as the vomiting and pain in the abdomen continued, Mr. Teale determined to operate.

An incision was made in the long axis of the tumor, exposing the aponeurosis of the external oblique, which was next divided, when the hernial sac, covered by a rather thick layer of tissue, presented itself. On opening the sac, a coil of large intestine, highly vascular, and a small portion of omentum were exposed. The constriction was found to consist in an opening in the internal oblique and transversalis muscles, presenting a sharp tendinous edge at its mesial border, where it was contiguous to the linea semilunaris.

The opening was dilated at its upper border, the intestine was returned into the abdomen, but the omentum, having contracted extensive adhesions, was allowed to remain in the sac.

In half an hour after the operation, the patient had a copious fæcal evacuation, and the abdomen became rather softer. Pulse 120, very feeble. On the following day he died.

Sectio cadaveris.—A small portion of the sigmoid flexure of the colon had again descended into the sac, where it had formed adhesions; these, however,

were so lax as to allow of the gut being readily pushed up. The mucous membrane of the whole of the large intestine, from the cæcum to the protruded portion of the sigmoid flexure, was quite black and of soft consistency. The interior of the cæcum and colon contained black fluid similar to that which had been vomited; the portion of sigmoid flexure lying in the sac was considerably injected, but its mucous membrane did not exhibit very much discoloration; below this part the gut appeared perfectly natural. The small intestines were natural, nor was there any effusion in the peritoneal cavity, nor deposition of lymph upon the serous surface.—*Provincial Medical Journal*.

Subconjunctival Operation for Cataract.—M. Bernard, of Paris, has published the details of an operation for depression of a cataract, in which he had recourse to the subconjunctival proceeding. The patient, an aged female, was seated in a low chair, the upper eyelid raised by a strabismus levator, and the eye fixed by a hook passed into the sclerotica. The conjunctiva being then drawn upon by another hook, the needle was passed in until it reached the place of election in the sclerotica, when the conjunctival hook being withdrawn, the elasticity of the membrane prevented its interfering with the passage of the needle. The cataract was then depressed in the usual way, and the instrument withdrawn. On examining the eye afterwards, the wound in the conjunctiva could not be perceived until the patient was directed to look inwards, when a slight red point, twelve millimetres from the cornea, could be distinguished. The patient had neither pain nor other inconvenience after the operation, and recovered perfectly.—*Ibid*, from *Gazette Médicale*. July, 1842.

Quinine found in the Urine and in the blood.—M. Landerer, on examining the sediment from the urine of a patient, to whom the sulphate of quinia had been given for intermittent neuralgic pains, found, besides the phosphate and urate of lime and carbonate of ammonia, traces of free quinia; the urine contained quinia in addition to the carbonate, sulphate, and hydrochlorate of ammonia.

The blood of a patient who had been taking quinia for remittent fever, and which was drawn on account of the supervention of pleurisy, had but a slightly bitter taste when first drawn, and while still warm; the bitterness was much more marked when it had become cold and coagulated. There was a great difference in the taste of the serum and of the coagulum; the latter was scarcely bitter, while the former was very much so. The serum consequently yielded quinia, after having been evaporated, the residue digested with acidulated water, filtered, and precipitated by ammonia. The fæces also contained quina. The serum of the blood of another patient also yielded quinia on analysis, presenting results exactly similar to those afforded by the first patient.—*Ibid*, from *Repertorium für Pharmacie*.

Cryptogamia in the Roots of Hairs.—M. Gruby presented to the Academy of Medicine, Paris, a memoir on a new species of cryptogame, which occupies the roots of the beard, and forms a species of contagious mentagra. The disease generally occupies the chin, lips, or cheeks; the affected parts are covered with greyish and yellow scales, formed by the epidermic cells, under which is the root of the hair surrounded completely by a sheath of cryptogamia; the latter are not elevated above the surface of the epidermis.—*Ibid*.